Reading file

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION IX**
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**San Francisco, CA 94105**

**OFFICE OF THE**
**REGIONAL ADMINISTRATOR**

January 21, 2011

Bob Abbey, Director
Bureau of Land Management
1849 C Street NW, Rm. 5665
Washington DC 20240
Phone: 202-208-3801

Subject: Emigrant Project Final Environmental Impact Statement (EIS), Elko County, Nevada [CEQ # 20100467]

Dear Mr. Abbey:

The U.S. Environmental Protection Agency (EPA) has reviewed the above referenced document. We also requested and reviewed an advanced copy of the Record of Decision (ROD) for this project. Our review and comments are provided pursuant to the National Environmental Policy Act (NEPA) and our review authority under Section 309 of the Clean Air Act, as well as the May 21, 2008 Memorandum of Understanding (MOU) between the Bureau of Land Management (BLM) and EPA.

The proposed Emigrant gold mine would disturb 1,418 acres of land and involve: (1) the excavation of a 615-acre open pit, (2) heap leaching of 92 million tons of ore with cyanide, and (3) the disposal of 83 million tons of waste rock over a 14-year mine life. A stream currently running through the proposed pit area would be channeled along the top of the backfilled waste rock. Geochemical test results indicate that there is potential for long-term contaminant mobility and elevated concentrations above water quality standards in surface water and groundwater at the mine for several metals and metalloids, even under non-acidic conditions.

As you are aware, EPA and BLM staff and managers have been working on this project for several years. In March 2009, EPA rated the Emigrant Mine Revised Draft EIS as "3 – Inadequate Information" because (1) the proposed waste rock handling methods were inadequate to prevent groundwater or surface water contamination, and the proposed project would likely result in unmitigated exceedences of the water quality standards on a long-term basis; (2) the Revised Draft EIS did not support BLM's conclusions that mine operations will not contaminate groundwater and surface water; (3) leachate control, capture, and/or treatment measures will be needed to effectively prevent groundwater and surface water contamination from the mine; and (4) a sufficient financial assurance mechanism needs to be in place to ensure that the necessary

funds are available as long as they may be needed for this purpose. To address our concerns, BLM prepared an Adaptive Management Plan (AMP) as an attachment to the Final EIS rather than preparing a revised or supplemental draft EIS.[1] The AMP commits to requiring appropriate additional geochemical testing and bonding to cover the costs of treating all waste rock as potentially acid generating. On October 29, 2010 EPA sent BLM comments (enclosed) on the AMP detailing the outstanding issues. Based on your November 10, 2010 meeting with Assistant Administrator Cynthia Giles, we understood that efforts to address our comments would continue with your staff and we would have an opportunity to review a revised AMP prior to publication of the Final EIS. However, we received no further feedback on the outstanding issues before the Final EIS was published on December 17, 2010.

While some of EPA's earlier issues have been addressed in the AMP, the Final EIS and draft ROD are not fully responsive to our primary concerns related to protection of water resources and financial assurance. The Final EIS is incomplete, internally inconsistent, and lacks substantive commitments to ensure that the proposed project will be fully environmentally protective. Unlike previous mining EISs in Nevada (e.g., Phoenix Mine), this EIS does not provide adequate geochemical characterization and lacks the degree of specificity for control measures we believe is critical to disclose in the NEPA process to ensure that they will be effective. In light of this and the unique circumstance of a stream running through the pit and waste rock, EPA believes that the Final EIS lacks sufficient detail to fully determine the environmental effects of the proposed action. EPA recommends that BLM revise the AMP and attach it to the ROD. We ask that BLM share these changes to the AMP and ROD with us so we can reach resolution between our agencies *before* the ROD is signed.

EPA recommends that BLM include in the revised AMP and ROD adequate detail on long-term post-closure O&M and monitoring and financial assurance commitments (e.g., for reclamation). BLM should also clearly specify the commitments with regard to geochemical testing, facility design, management, monitoring, and financial assurance. The enclosed recommendations outline the additional commitments and details that should be included in the revised AMP and ROD. Please note that if the AMP and ROD do not properly reflect the aforementioned commitments, or if the commitments are not fully implemented, EPA will consider referring the action to the Council on Environmental Quality under our authority under Section 309(b) of the Clean Air Act.

Lastly, BLM has taken the position that financial assurance is not an appropriate topic for discussion in an EIS. While we acknowledge that the draft ROD references financial assurance, we disagree with your position because adequate resources to ensure viable reclamation, closure, and post-closure management are a critical factor in a mining project's environmental acceptability. As you know, BLM Nevada did include such information in the 2002 EIS for the Phoenix Mine. There are significant lessons to be learned from the history of the project's long-term trust fund which remains significantly underfunded and includes inappropriately variable

[1] As standard practice, EPA does not believe that AMPs should be used as a substitute for assessment. However, in this case because our staff and managers had been actively engaged in issue resolution for over five years and BLM agreed to require financial assurance to cover the cost of capping all Emigrant Mine waste rock, we agreed to consider this approach.

and risky investments as demonstrated by the loss of approximately 40 percent of the fund in late 2008.

We are available to meet with you and your staff to further discuss this letter. Your staff can call Kathleen Goforth at (415) 972-3521 or Jeanne Geselbracht at (415) 972-3853. We look forward to continuing to work with BLM.

Sincerely,

Jared Blumenfeld
Regional Administrator

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Enclosures: EPA's Recommendations for Emigrant Mine Record of Decision
October 29, 2010, email from Jeanne Geselbracht, EPA, to Tom Schmidt, BLM

cc: Amy Leuders, BLM – Reno Office
Ken Miller, BLM – Elko District Office
Colleen Cripps – Nevada Division of Environmental Protection

## EPA's Detailed Comments on the Emigrant Mine Final EIS and Recommendations on the Draft Record of Decision

Because the Final EIS was not fully responsive to the concerns EPA raised to the Bureau of Land Management (BLM) throughout the development of this project, the following detailed comments reiterate those comments and concerns. In particular, many of the comments EPA made on the Revised Draft EIS remained unaddressed. Further, the Final EIS does not respond to the issues raised in detail in our October 29, 2010 transmittal (enclosed) regarding BLM's September 22, 2010 draft AMP and draft Supplemental Waste Rock Characterization Study Plan (SWRCSP). The following recommendations outline the commitments and details that should be included in the revised AMP and ROD. In general, the issues fall into three categories: (1) inconsistencies, contradictions, and lack of transparency in commitments; (2) need for detailed commitments on engineering controls and monitoring; and (3) need for financial assurance information.

### Inconsistencies, Contradictions, and Lack of Transparency in Commitments

The Final EIS and AMP are, in numerous respects, inconsistent with each other and with the draft SWRCSP and BLM's own *Rock Characterization and Water Resources Analysis Guidance for Mining Activities* (BLM IM-NV-2010-014). For this reason, the Final EIS, as written, could result in improperly conducted future geochemical analyses, which could subsequently result in improper adaptive management decisions and ineffective engineering controls.

For example, the AMP indicates that Newmont's Net Carbonate Value (NCV) testing as well as Paste pH will be used to select samples for kinetic testing, but the draft SWRCSP, which appeared to be more consistent with BLM IM-NV-2010-014, did not include these methods. EPA does not believe that NCV and paste pH methods should be used for this purpose because we believe the very short term paste pH and the NCV results dramatically under-predict the longer term acid generation potential of the samples.

We provided comments to BLM regarding the SWRCSP, which we received for review in October. Although the draft ROD (p. 3, bullet 2) indicates that the SWRCSP was added to the AMP to monitor the waste rock handling program, the SWRCSP could not be found in the AMP or elsewhere in the Final EIS. Therefore, it is unclear whether it has been revised and what the final SWRCSP actually specifies.

**Recommendation:** BLM should rectify the inconsistencies and contradictions between the AMP, SWRCSP, and IM and clarify geochemical protocols as outlined in our October 29 comments, and include the revised AMP and SWRCSP in the ROD.

The draft ROD, as currently written, would approve the proposed action as it is described in Chapter 2 of the 2008 Draft EIS. Chapter 2 of the Final EIS differs from the 2008 Draft EIS, and it is unclear why BLM would approve the project as it was described in the earlier document. More importantly, however, Chapter 2 of the Final EIS continues to propose all of the same design elements and geochemical testing that were proposed in the 2008 Draft EIS, some of which are to be superseded by the AMP, according to BLM staff. Chapter 2 of the Final EIS

does not acknowledge or reference the AMP, resulting in additional confusion about what is actually being proposed in the Final EIS and approved in the ROD.

**Recommendation:** The ROD should reference the proposals in the revised AMP rather than those in the 2008 Draft EIS.

The draft ROD also states that Newmont will collect an additional 15 samples which will be tested "in conformance with EPA technical document Acid Rock Drainage Prediction (1994)" and other procedures. As we have informed BLM, EPA's 1994 technical document is a literature review, not policy, and BLM's "conformance" with the document is misplaced. The document refers to papers by BC AMD Task Force, 1989, and R.D. Humphreys, 1990, and we do not recommend using the endpoints in those papers for interpreting the Emigrant Mine kinetic test results. Kinetic test results need to be interpreted in the context of all available geochemical information, and within the context of potential resource impacts. For example, Nevada's aquatic life standards for pH are 6.5 - 9.0, and this should be considered in interpreting test results and the potential impact of mine drainage on surface waters.

**Recommendation:** The ROD should delete any reference to conformance with EPA's technical document Acid Rock Drainage Prediction (1994). BLM should ensure that kinetic test results are interpreted in the context of all available geochemical information, and within the context of potential impacts to surface water and groundwater quality.

**Need for Detailed Commitments on Engineering Controls and Monitoring**

Adequate details on the in-pit channel, leachate collection system, perpetual O&M for these facilities, and the perpetual water quality and site facilities monitoring plan are not provided in the Final EIS, AMP, or draft ROD. Without this information, we believe the proposed project could pose environmentally unacceptable risks to surface water and groundwater quality.

**Recommendation:** The revised AMP and ROD should include specific details and commitments regarding engineering controls and monitoring as outlined in our October 29 comments, including the following.

- How all leachate (including non-acidic leachate) from the in-pit backfill will be directed/collected and then monitored and, if necessary, pumped or otherwise controlled both during and after mining. We also note that the draft ROD indicates that the waste rock disposal facilities will be monitored following periods of heavy spring snow melt or a precipitation event with potential for run-off, and that observations of abnormal conditions or unusual flow or ponding will result in solutions being sampled, analyzed, contained or treated as necessary. However, it is unclear how collected, daylighted seepage from in-pit waste rock, which may not turn out to be unusual or abnormal, will be monitored.
- Specifications for the synthetic covers for both the in-pit and upland waste rock disposal facilities, including construction phases, post-mining monitoring, O & M, and replacement needs.

- Design specifications and long-term, post-closure monitoring and management provisions for the in-pit channel (e.g., dredging of channel and adjacent ditches, repair of berms, etc.) to ensure that mine drainage will not seep or spill into the channel and waters of the U.S.
- Specifications for the potentially acid-generating waste rock temporary storage pile, including its location and depiction on a map.
- The detailed monitoring plan for mining operations, closure, and post-closure phases for all site facilities, groundwater, and surface water, including specific sampling and testing protocols, sampling sites, sampling frequencies, who will sample and test, reporting, etc.

**Need for Financial Assurance Information**

The Emigrant AMP proposes measures and controls that we believe will require long-term post-closure O&M to protect water quality. The need for long-term post-closure O&M, facilities replacement, and monitoring, however, are not acknowledged in the Final EIS, AMP, or draft ROD. Nor are adequate details regarding financial assurance commitments (e.g., for reclamation) included in these documents. Although we recognize that BLM has its own independent process under the general mining law regulations, we believe the revised AMP and ROD should provide the cost estimates for the reclamation and long-term management and monitoring, as well as meaningful assurances that an adequate financial instrument will exist to ensure adequate funds are available as long as they may be needed for this purpose.

Although BLM has taken the position that it does not address financial assurance in EISs, EPA disagrees with this position. We believe that financial assurance is a critical element and should have been disclosed in the Emigrant Mine EIS because the viability of the reclamation, closure, and post-closure management is a critical factor in whether this project may be considered fully protective of environmental resources. Furthermore, we believe this information is significant and essential for an adequate analysis of the proposed project because it could make the difference between a project that is sufficiently managed over the long-term by the site operator and an unfunded or under funded contaminated site that becomes a liability that may need to be addressed under the Comprehensive Environmental Response, Compensation, and Liability Act.

> **Recommendation:** The revised AMP and ROD should include the reclamation cost estimate and long-term post-closure management and monitoring cost estimates, and describe how sufficient funds to cover the long-term costs will be guaranteed to be available for as long as they are needed. If long-term post closure costs will be included in the reclamation bond, in addition to the projected long-term engineering and monitoring costs of each activity, the revised AMP and ROD should identify appropriate contingencies and time frames considered in calculating the funding level.
>
> **Recommendation:** If a long-term trust fund will be established for the Emigrant Mine, the appropriate level of funding, types of financial instruments, and mechanics of the fund are critical to ensuring it will be available when it is needed. In addition to the projected long-term engineering and monitoring costs of each activity, the revised AMP and ROD should discuss the financial assumptions used to estimate the funding level, projected trust fund growth rate, and mechanics of the trust fund. The fund mechanics

include: (a) requirements for timing of payments into the trust fund; (b) how BLM ensures that the trust fund is bankruptcy remote; (c) acceptable financial instruments (such as those specified in 43 CFR 3809.555); (d) legal structure of the trust for tax purposes; (e) who will pay the taxes on trust earnings and trust fees and expenses; (f) how taxes and trust fees will be paid on the trust if the mining company goes out of business; (g) who will make investment decisions if the operator is no longer viable; (h) if the federal government controls the investment decisions, what legal and ethical issues arise from BLM controlling investment decisions about investments in private companies, voting stock and similar issues if the trust owns stock; (i) the identity of the trust fund beneficiaries; and (j) the identity and corporate structure of the operator with responsibility/ liability for financial assurance at this site.

## Emigrant AMP - Outstanding Issues

Jeanne Geselbracht to: Tom_Schmidt 10/29/2010 04:34 PM

Cc: David_Overcast, Kenneth_Miller, "Craig Smith", Deb_McFarlane, John Hillenbrand, Kathleen Goforth, Carter Jessop

Tom, here are the outstanding Emigrant issues we hope we can resolve quickly. We understand the financial assurance issues need to be resolved at the agency level and we have asked that our Assistant Administrator for Enforcement Cynthia Giles raise it when she meets with Bob Abbey on November 9. Please call me when you've had a chance to review these so we can see if we are nearing agreement.

Jeanne Geselbracht
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San Francisco, CA 94105

Phone: (415) 972-3853

Fax: (415) 947-8026 Emigrant EIS Needs 10-29-10.doc

# Emigrant Mine EIS Needs

BLM has focused most of its Emigrant project improvements in an Adaptive Management Plan (AMP) and the "Supplemental Waste Rock Characterization Study Program – Emigrant Project" (SWRC), which it intends to include as appendices to the EIS. While EPA does not approve of the use of an AMP as a substitute for assessment that should have been completed prior to publication of the EIS, EPA informed BLM that they needed to either (1) complete geochemical characterization tests before publishing the EIS, or (2) require that all Webb Siltstone waste rock (67% of total waste rock) be managed as if it is potentially acid generating (PAG). BLM has agreed to require bonding to cover the cost of managing all Webb Siltstone waste rock as PAG (including construction of a synthetic cover over the waste rock) until geochemical testing has been completed, at which time a determination will be made regarding how much waste rock is PAG and whether the synthetic cover will be needed or another management option can be implemented instead.

**Greater detail is needed.** The EIS should include details on:

- How all leachate from in-pit backfill will be directed/collected and then monitored and potentially pumped or otherwise controlled (which needs to be included in the cost for both reclamation bond and long-term trust fund). The EIS should include design specifications for controls and describe management and monitoring both during and after mining. (AMP, page 6, bullet #1)
- Groundwater and surface water monitoring plan, including specific sampling and testing protocols, sampling sites, sampling frequencies, who will sample and test, reporting, etc., both during and after mining. (AMP, page 6, bullet #6)
- PAG waste rock temporary storage pile. The AMP (page 13) refers to "a lined facility with appropriate engineering controls." The EIS should include specifications for this facility and describe its location and identify it on a map. (AMP, page 13, paragraph 3)
- Synthetic covers for all in-pit and upland waste rock disposal facilities. The EIS should include specifications for these facilities and describe construction phases, as well as post-mining monitoring, operations and maintenance (O & M), and replacement needs. (Page 13, paragraph 5)
- Design specifications and long-term, post-closure management provisions for the in-pit channel (e.g., dredging of channel and adjacent ditches, repair of berms, etc.) to ensure that mine drainage will not seep or spill into the channel and waters of the U.S.

**Discussion of financial assurance is needed.** EPA believes that, in addition to the reclamation bond, a long-term trust fund will be needed for long-term management of the Emigrant Mine. The AMP should include discussions of:

1. The reclamation cost estimate
2. Long-term post-closure management and financial assurance, including:
   - Long-term post-closure monitoring and management measures, including:
     - Groundwater and surface water monitoring
     - Replacement, O&M, and monitoring of the synthetic waste rock cover(s)
     - Monitoring and controlling and/or treating leachate from waste rock disposal facilities (synthetic cover or no synthetic cover)

  - O&M of in-pit channel (repairs, dredging of sediment inside and outside of channel)
  - Managing in-pit mine drainage and preventing it from entering in-pit channel (through seepage or overflows)
- The cost estimate for implementing these measures for as long as they will be needed after mine closure
- How the long-term trust fund will be established and funded, and the basis for the fund value. This is needed to demonstrate that funding will be available to conduct the monitoring and management actions in the AMP for as long as they will be needed.

As the draft AMP states on page 5, "not all constituents that could be released from PAG waste rock would be attenuated as a result of contact with limestone. Certain constituents (sulfate, nitrate, chloride, fluoride, and manganese) would not be attenuated." EPA believes arsenic and other metalloids would not likely be attenuated either. Therefore, the AMP needs to recognize and include provisions for controlling leachate containing these constituents.

**Geochemistry discussion should be revised.** Newmont wishes to independently continue using its NCV (Net Carbonate Value) test and Paste pH test to categorize waste rock as acid generating, neutral, or neutralizing. However, the BLM State Office and EPA have both stated that, to date, NCV and Paste pH test results for Emigrant Mine samples have not been shown to reliably correlate with neutralizing potential to acid potential (NP:AP) ratios. We understand this is the reason that NCV and Paste pH are not included in the list of test methods identified in the latest version of the SWRC. The current discussion and conclusions in the AMP are misleading and conflict with verbal discussions EPA has had with BLM State Office staff regarding this issue. Several sections of the AMP discuss the NCV and Paste pH tests as if they have been deemed definitive and reliable for use in determining acid generating potential. For these reasons, several statements in the AMP should be deleted:

- Page 4, paragraph 3, sentence 3.
- Page 4, paragraph 5, sentence 2.
- Sub-section 4.1.1, *Monitoring Program*: This section, particularly the first three full paragraphs on page 7, includes much irrelevant and/or misleading information regarding conclusions and geochemical categorization based on NCV and Paste pH results. It addresses both testing for waste rock classification and waste rock facility monitoring. This section should be deleted, and a new discussion of the testing that will occur pursuant to the SWRC should be placed in Section 5, *Adaptive Management Plan.* Because BLM is not sanctioning the use of NCV/Paste pH test results in characterizing waste rock, all discussion of NCV/Paste pH tests should be deleted from BLM's EIS, including the AMP. A separate section on monitoring the waste rock facilities and surface water and groundwater throughout mine life, closure, and post-closure vis-à-vis adaptively managing the mine should be included in section 7.

**The AMP and SWRC plan need to be reconciled regarding field oxidation testing.**
The AMP includes field oxidation testing, but the SWRC plan does not. In addition, according to the AMP, the testing samples would be selected based on NCV, which we believe would misclassify the samples. Furthermore, it is not clear that the results from these tests would be

useful because the only measurements proposed for the field tests are water volume, pH, specific conductivity, color of water, and presence of sediment.

**Water quality monitoring protocols need to be detailed and consistent among documents.** The AMP (page 6, bullet #6) states, "The proposed procedure for controlling acid generation from PAG waste rock includes... Development of a [sic] groundwater and surface water monitoring measures in conjunction with the NDEP permits and the BLM POO requirements." The water quality monitoring plan should be developed now and included in the EIS. Neither the AMP, the Revised Draft EIS, nor the latest version of the Waste Rock Management Plan that we have (March 2007) includes a detailed surface water and groundwater monitoring plan. Section 7 of the Waste Rock Management Plan and Section 7 of the AMP address only the monitoring of waste rock *management*, not its effects on water quality. The monitoring discussion in the Revised Draft EIS (p. 3-64) is extremely vague about monitoring surface water for total suspended solids and "possibly other chemical constituents in surface water upstream and downstream of the proposed Emigrant Project site..." and does not address groundwater. As stated on the previous page, the EIS needs to include the groundwater and surface water monitoring plan, including specific sampling and testing protocols, sampling sites, sampling frequencies, who will sample and test, reporting, etc., both during and after mining. This plan needs to be consistent with all other Emigrant Mine documents such as the Waste Rock Management Plan, POO, and Nevada Division of Environmental Protection (NDEP) permits.

We reiterate our recommendation from page 3 of our February 9, 2010, letter on BLM's December 2009 version of the AMP:

> The AMP should consider all potential failure modes and effects and ensure that contingency measures are identified and implementable in the event they become necessary. Furthermore, the plan should have a clear and detailed process linking monitoring with on-the-ground actions and agency enforcement.
>
> In order to address potential real issues and potentially inaccurate predictions, EPA believes the AMP should: (1) include a specific monitoring plan, focused on looking for formation of leachate and water quality impacts, to ensure that the predictions based on SWRC testing are valid, and (2) identify additional, enforceable contingency measures to address and correct problems discovered through monitoring. The AMP should include testing the following potential failure modes:
>
> 1. What if the SWRC (including kinetic tests) underpredicts acid mine drainage potential?
> 2. What if the SWRC study fails to identify other sources of contaminants (e.g. arsenic associated with neutral or alkaline drainage)?
> 3. What if proposed mitigation (e.g. PAG encapsulation) fails to reduce leachate quantity or quality sufficient to protect water quality?
>
> The AMP should include outcomes or management measures for each of the potential failure modes listed above.

It also remains unclear why every third blast hole would be sampled and analyzed rather than every blast hole. The AMP should provide information demonstrating the statistical validity of only sampling every third blast hole and explain why all blast holes are not sampled and analyzed.

The AMP (page 2) states that if humidity cell tests show that greater than 14 million tons of waste rock is classified as PAG, Newmont would be required to amend the POO. The POO should be amended prior to approval to include all design specifications and contingency management actions that are included in the AMP. The AMP and SWRC plan should be referenced in the POO to ensure consistency between all these plans.

## Supplemental Waste Rock Characterization Study Program Needs

**More detail is needed on proposed data analysis.** Section 5, *Data Analysis*, of the SWRC plan should specify:

- How static and kinetic test results will be analyzed to discern reliable correlations and establish thresholds for classifying PAG and non-PAG rock during mining operations. Also, if Newmont will be independently trying to determine whether a reliable correlation exists between ABA and NCV/Paste pH results, the AMP should indicate what steps BLM and NDEP would take to analyze and potentially approve such an alternative classification scheme for use during mining operations. If NCV/Paste pH test results are not considered part of BLM's AMP/SWRC plan, all discussion of NCV/Paste pH should be deleted from the AMP and SWRC plan.

- That mineralogy testing will be conducted before the humidity cell tests (HCT) are begun, so the results can be used in interpreting HCT results and in determining when to terminate the HCTs.